

FIELD RETTING PHOTO-INSTRUCTIVE GUIDE



Figure 1. Time: 0: immediately after cutting. After harvest, fiber hemp must undergo a retting process. Retting is akin to a controlled rot. Stalks are colonized by microbial communities in the soil that feed on the pectin and lignin that bind the bast fiber (bark layer) to the hurd (inner woody core). Field retting commences as soon as plants are cut and left lying on the ground. Stalks should be laid out in an organized manner to ensure a more even process. They should all be aligned on the earth in a layer thin enough to expose the grass between them while still touching. Stalks should also be oriented in a consistent line of grain-heads and root ends.



Figure 2. Stalks retting on the ground in a uniform orientation of root-ends and grain heads.



Figure 3. Time: 1: one week of field retting has elapsed. Field Retting is entirely dependent on moisture and temperature for microbial activity to take hold. After a week, stalks will begin to change color and dry down. Retting Piles must be flipped roughly every six days to establish an even retting process. This can be done by inserting the butt-end of a hoe under the grain-head end of the plants and turning them over without displacing the root end. If they are not turned, stalks directly in contact with the soil will retain their green color and risk molding while those exposed to more sunlight risk drying out without retting.



Figure 4. Time: 2: two weeks of field retting has elapsed. Field retted hemp will develop black markings when it is fully retted. In the height of summer, field retting in the Northeast will take about 16 days. To test if the stalks are retted or not, take a stalk and snap it in a few places. If the hurd material readily falls to the ground in small woodchips, the stalks are likely well-retted. The bast fiber should not break, but rather bend and flex in your hand. If the bast fiber snaps along with the hurd, the stalk may be over retted. It is important to assess multiple stalks in this way before collecting the pile for drying.



Figure 5. Time 3: three weeks of field retting has elapsed. The darkened color of these stalks warns that they could risk over-retting if they are not watched closely or removed from the field for drying in the event of rain. In this stage of retting, they are most susceptible to white mold, which will occur first on the stalks in close contact with the ground. The bast fiber pulling away from the hurd in the top left corner is a sign that the retting is well underway, if not complete.



Figure 7. Bast fiber seen pulling away from hurd.



Figure 6. Time 4: four weeks of field retting has elapsed. The fiber shown here is over-retted, as indicated by several breaks in the bast fiber. Over-retted fiber will be both weaker in tensile strength and shorter in staple length due to breakage. These fibers could still have value in certain industrial applications but would not be well suited for spinning fiber.



This research was supported with funds from the USDA SARE and USDA CARE grant programs. Project numbers ONE22-410 and VTN-FP00003154, respectively.

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